



Illinois Environmental Protection Agency 2200 Churchill Road, Springfield, IL 62706

217/782-2113

I.D. No.: 043110AAC  
Application No.: 84060002

July 6, 1984

Griffith Laboratories  
12200 South Central Avenue  
Alsip, Illinois 60658

Attention: John Kjellstrand

This is in response to a telephone call from Mr. Dickinson to Mr. Cobb on July 3, 1984, concerning the environmental impact of ethylene oxide emissions from the six proposed sterilizers included in the above mentioned construction permit application.

According to the information provided by your company in the application, the maximum emissions of ethylene oxide were 40 tons per year during 1983. The data you provided included a building which may cause a downwash effect, therefore, the ISCST model was used in the analysis. ISCST utilized one year of meteorology (1975 Midway), the urban dispersion mode and the building downwash option. Model results were obtained at 180 receptors located on five rings surrounding the source. Each ring contained 36 receptors spaced at 100° intervals. The rings were spaced at radial distances of 100, 400, 810, 1205, and 1609 meters from the source. According to the modeling run, the maximum annual ground level concentrations of ethylene oxide will vary from 3.120 micrograms per cubic meter at 100 meters to 0.09883 micrograms per cubic meter at one mile outside the plant boundary line. A copy of the modeled annual concentrations is attached.

The ethylene oxide (ETO) toxicity data was derived from different literature references. One such document is a USEPA draft publication -- "Health Assessment Document - Ethylene Oxide - EPA 600-8-84-009A." A copy of this document can be obtained by calling USEPA at phone number 513/684-7562.

The toxicity data provides evidence of human cancers of the pancreas, bladder, brain, central nervous system and stomach associated with ETO exposure. Various animal studies have shown carcinogenic, mutagenic, leukogenic and teratogenic effects. These studies indicate that the acceptable ground level concentrations of ETO is 0.007 micrograms per cubic meter. While the Agency does not have any established standards for ETO at this time, nor are we suggesting that the acceptable concentrations referenced above are necessarily the numbers that we are committed to using, in our opinion the emissions from the Micro Biotrol facility appear to be several magnitudes higher than desirable.

B.E.  
7-6-84  
Dmt I

EEA-ENVIRONMENTAL ANALYST  
RELEASED

AUG 10 2016

ORNL/DOE/JRRA



Page 2

We request a meeting as soon as possible to be able to better explain our evaluation and concerns. In our opinion, there are several methods by which emissions of ETO at this facility can be reduced. At our meeting, we wish to also discuss steps that can be taken to minimize emissions in order to reduce the ambient impacts to an acceptable level.

We are looking forward to hearing from you in the near future. In the meantime, should you have any questions, please feel free to call Jim Cobb, Marish Desai or me at 217/782-2113.

Very truly yours,

A handwritten signature in black ink, appearing to read "B. Mathur".

Bharat Mathur, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

BM:JDC:sd/1392d/24-25  
 JDC

cc: Warren Dickinson, Griffith Laboratories  
Dennis Lawler  
Permit File  
Region 1  
